

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark  
Office  
(Box PCT)  
Crystal Plaza 2  
Washington, DC 20231  
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

<b>Date of mailing</b> (day/month/year) 11 June 1999 (11.06.99)	
<b>International application No.</b> PCT/US98/21632	<b>Applicant's or agent's file reference</b> F125022
<b>International filing date</b> (day/month/year) 20 October 1998 (20.10.98)	<b>Priority date</b> (day/month/year) 20 October 1997 (20.10.97)
<b>Applicant</b> AGARWAL, Anil, K. et al	

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

18 May 1999 (18.05.99)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	<b>Authorized officer</b>  Nicola Wolff  Telephone No.: (41-22) 338.83.38
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## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

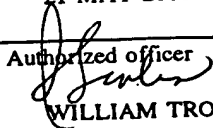
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference F125022	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US98/21632	International filing date (day/month/year) 20 OCTOBER 1998	Priority date (day/month/year) 20 OCTOBER 1997
International Patent Classification (IPC) or national classification and IPC IPC(6): H04Q 7/20 and US Cl.: 455/522		
Applicant COMSAT CORPORATION		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 20 MAY 1999	Date of completion of this report 21 MAY 2000
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer  WILLIAM TROST Telephone No. (703) 308-5318

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US98/21632

## I Basis of the report

1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed  
☒ the description:  
 pages 1-12, as originally filed  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_  
☒ the claims:  
 pages 13-16, as originally filed  
 pages NONE, as amended (together with any statement) under Article 19  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_  
☒ the drawings:  
 pages 1-4, as originally filed  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_  
☒ the sequence listing part of the description:  
 pages NONE, as originally filed  
 pages NONE, filed with the demand  
 pages NONE, filed with the letter of \_\_\_\_\_

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.  
 These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages NONE  
☒ the claims, Nos. NONE  
☒ the drawings, sheets/fig. NONE

5. ☒ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\*Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US98/21632

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. statement

Novelty (N)

Claims NONE

YES

Claims 1-18

NO

Inventive Step (IS)

Claims NONE

YES

Claims 1-18

NO

Industrial Applicability (IA)

Claims 1-18

YES

Claims NONE

NO

### 2. citations and explanations (Rule 70.7)

Claims 1-9 lack novelty and inventive step under PCT Article 33(2)-(3) as being obvious over Kanai in view of Larsson et al (Hereinafter Larsson).

Regarding claims 1 and 5, Kanai discloses a method for dynamically determining the power compression point of an amplifier (27) controlled by a computer (49). Kanai further discloses the amplifier is operatively coupled to a plurality of second terminals (19) by a communications channel. Kanai also discloses transmitting a signal at N power levels (based upon control signals and BER for that level). Kanai fails to disclose reducing the maximum allowed power if it determines that the amp is approaching saturation.

On the other hand, Larsson teaches a system in which signal quality (BER) measurements are taken for a plurality of points (power levels, Cols. 4-5) in which a maximum allowed power is reduced when it is determined that the amplifier is approaching saturation (reaches maximum allowed power - Figure 4, step 9). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a maximum measurement in order to prevent too 'hot' of a signal within the system.

Regarding claims 2-4, 6-9, Larsson further teaches the determination of an average as well as a prediction of the next power level (i.e. - determining slope), as well as the use of a TDMA system which inherently includes frames. Larsson also teaches that the signals that control the power levels are control bursts (note Col. 4;35-48, use of commands by base station). Thus, claims 2-4, 6-9 are rejected given the same reasoning as in the objection of claims 1, 5 above.

Claims 10-11, 14-15, 18 lack novelty and inventive step under PCT Article 33(2)-(3) as being obvious over the prior art as applied in the immediately preceding paragraph and further in view of Takahata et al (hereinafter Takahata).

Regarding claims 10-11, 14-15, 18, the combination of Kanai and Larsson disclose all the particulars of the claim except for the explicit use of a control burst bit error rate. However, Takahata teaches a system in which a reference burst is used in a (Continued on Supplemental Sheet.)

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

**I. BASIS OF REPORT:**

5. (Some) amendments are considered to go beyond the disclosure as filed:  
NONE

**V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):**

time slot communication system in which the mobile station utilizes power control based upon the reference level of the reference burst (i.e. - based on the control burst, Col. 3;40-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a control burst in order to allow a dedicated channel for power level measurements.

Claims 12-13 and 16-17 lack novelty and inventive step under PCT Article 33(2)-(3) as being obvious over the prior art as applied in the immediately preceding paragraph and further in view of Yamaura et al (hereinafter Yamaura).

Regarding claims 12-13, 16-17, the combination of Kanai, Larsson, and Takahata discloses all the particulars except for the establishment of BPSK or QPSK modulation techniques depending on the BER. However, Yamaura teaches the use of a either BPSK or QPSK signal modulation depending on the level of a BER measurement in a wireless system (Col. 14;40-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include BPSK/QPSK modulation in order to reduce the number of errors within the system.

----- NEW CITATIONS -----  
NONE

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/21632

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :H04Q 7/20

US CL :455/522

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 455/522, 9, 10, 11.1, 12.1, 13.4, 427, 430, 69, 504, 505

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS

search terms: BER, bit error rate, saturation, maximum, slope, average, mean, multiple or plural power levels, threshold

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,941,199 A (SAAM) 10 July 1990, see whole document.	1-18
A	US 5,465,399 A (OBERHOLTZER ET AL) 07 November 1995, see whole document.	1-18
Y, P	US 5,697,056 A (TAYLOE) 09 December 1997, see Columns 3-4, Figures 6 and 9.	1-18
A, P	US 5,768,684 A (GRUBB ET AL) 16 June 1998, see whole document.	1-18
Y	US 5,241,690 A (LARSSON ET AL) 31 August 1993, see Columns 2-5.	1-18



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\*

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\*

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\*

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

\*A\*

document member of the same patent family

Date of the actual completion of the international search

29 DECEMBER 1998

Date of mailing of the international search report

16 FEB 1999

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/21632

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,504,776 A (YAMAURA ET AL) 02 April 1996, see Col. 14;40-55.	12-13, 16-17
Y	US 5,386,589 A (KANAI) 31 January 1995, see abstract, Figures 2-5.	1-18
Y	US 4,910,792 A (TAKAHATA ET AL) 20 March 1990, see Col. 3;30-Col. 4;25.	10-18